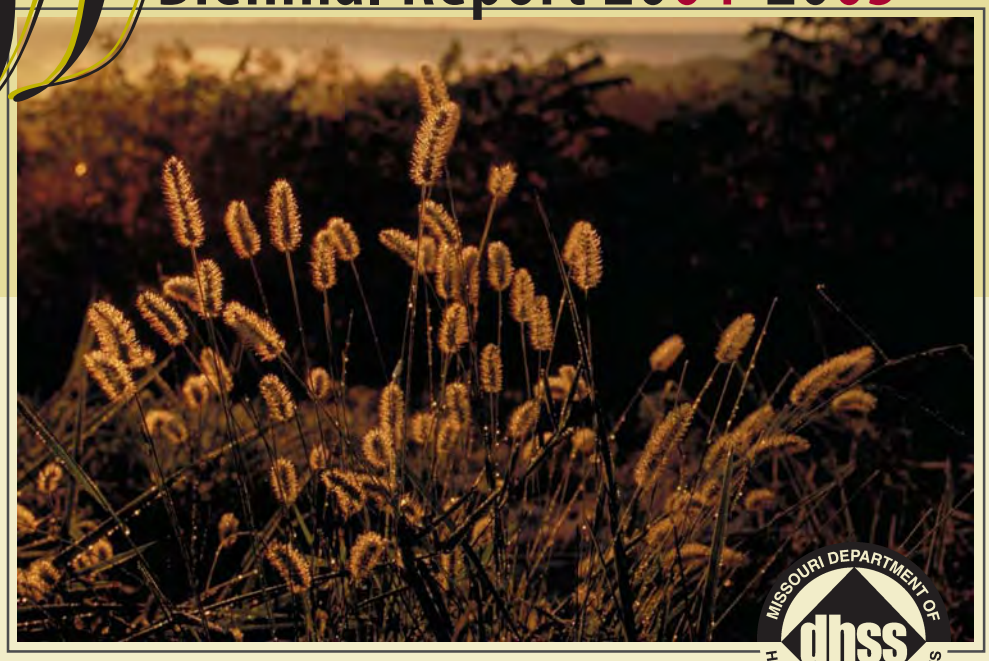
Missouri Office of Rural Health Biennial Report 2004-2005



Missouri Department of Health and Senior Services
Office of Primary Care and Rural Health
www.dhss.mo.gov/PrimaryCareRuralHealth

TABLE OF CONTENTS

Rural Health Biennial Report to the Governor and General Assembly

Introduction

The Missouri Office of Rural Health (the Office) was established by the 1990 General Assembly to "assume a leadership role in working or contracting with state and federal agencies, universities, private interest groups, communities, foundations, and local health centers to develop rural health initiatives and maximize the use of existing resources without duplicating existing effort." The authorizing legislation, 192.604 RSMo 2004, also requires the Office to submit a biennial report of its activities and recommendations to the governor and members of the general assembly on or before November fifteenth of odd-numbered years. This report is submitted in compliance with that statute.

Missouri's Office of Rural Health is located within the Office of Primary Care and Rural Health, Division of Community and Public Health, Missouri Department of Health and Senior Services. The Office, in addition to the statutory roles, analyzes and disseminates rural health information and conducts outreach activities and applied research to improve the health of rural Missourians.

Goal of the Missouri Office of Rural Health:

- To improve health outcomes in rural Missouri.

Strategies:

- Improve or build rural health networks and systems through collaboration with state and local agencies and community-based rural health coalitions and stakeholders.
- Increase awareness, advocate for, and develop policies to address rural health care availability and quality.
- Provide technical assistance and resources to rural health care facilities, communities, and rural health stakeholders in order to achieve defined and measurable outcomes for improving health care services and their delivery.

Challenges in Rural Missouri

The challenges and obstacles in providing quality health care services and delivery solutions to rural Missourians come largely from geographic isolation and the lack of critical population mass. Increasingly diverse cultures, struggling economies and limited financial and human resources influence efforts to address disparities in and the quality of health care services in rural communities. Difficulties in recruitment and retention of needed professionals force rural communities to find creative solutions to maintain their health care workforce. The goal of rural communities continues to be the efficient use of resources and the identification of strategies and methods for tracking, reporting and improving performance and quality in their communities' systems of care.

Defining Rural Missouri

For purposes of this report, rural Missouri will be defined as those 103 counties in the state that do not contain Urbanized Areas, as established in 1999 by the U.S. Bureau of the Census (Map 1). The rural counties make up 89 percent of the state's counties. The data and information provided throughout this report will be defined according to this classification. The map below shows the counties defined as rural and urban, according to this definition.

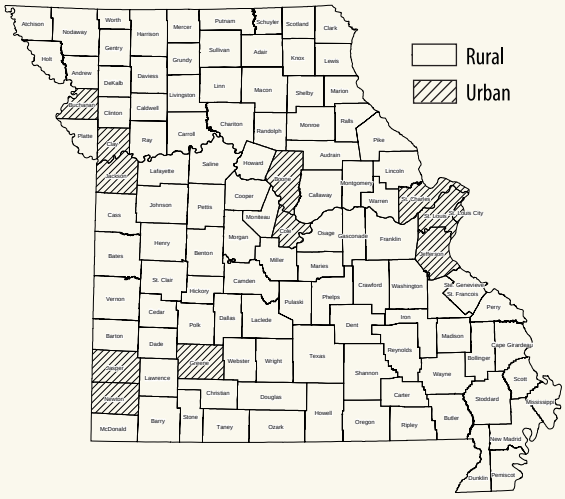
Changing Populations

Population estimates released by the United States Bureau of the Census indicate a continuing trend of population loss in many rural counties, especially those in northern Missouri. Thirty-nine counties had population losses of up to 5% between the last national Census of the Population and estimates of 2004. Of those that lost population, thirty-six (92.3%) were rural counties, twenty-five of which were north of the Missouri River. Three counties in the bootheel region, three counties in the Mark Twain National Forest, and three counties in western Missouri also experienced population loss. Although 56% of the total population loss was due to changes in St. Louis City and St. Louis County, the rate of loss (percent of population) was greater in 21 rural counties than in the urban areas.

There were seventy-six counties that gained population during that same time period. Although the majority of rural counties gained in population (65%), the largest rural county gains were in those counties adjacent to the urban areas. Those counties were Cass, Christian, Franklin, Lincoln, Platte and St. Francois. This is indicative of the growth of suburban communities, often at the expense of more urbanized areas. Other rural counties that experienced growth are in the Fort Leonard Wood, Truman Reservoir and Branson areas. The changes in population in all of Missouri counties are shown in Map 2.

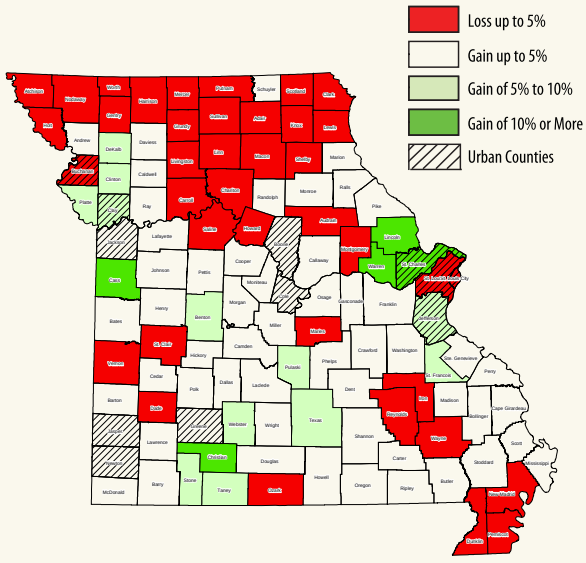
The fastest growing ethnic group in Missouri is the Hispanic population. Statewide there was a 92 percent increase in Hispanics between the censuses of 1990 and 2000. Much of this increase occurred in the northeast and southwest portions of the state, although there were notable gains across the state, including the Bootheel. There are indications that more minorities are moving into Missouri's rural counties, especially in the south central area of the state. The changes facing rural communities in terms of languages and culture are compounding problems around inadequate infrastructure and resources.

Map 1 *Rural and Urban Counties Based on Urbanized Area Criteria Census of the Population, 2000*



Map 2 *Changes in Population in Missouri, 1999 to 2003*

Source: Missouri Information for Community Assessment (MICA), www.dhss.mo.gov



Health Status

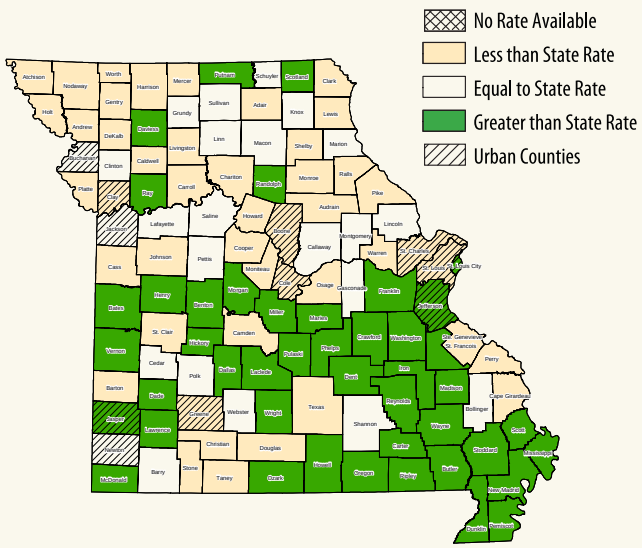
An indicator of the disparity in health status between the urban and rural populations is the variation of the death and hospitalization rates for various diseases and health conditions among the counties of the state. The following section looks at diseases and health conditions identified on the Missouri Department of Health and Senior Services website as the leading causes of death (Community Data Profiles) and the most pressing health issues (Priorities, Missouri Information for Community Assessment). These web-based tools provide the listing of diseases and health conditions that most impact the state. From these tools, ten health status indicators were selected: Total Death Rate, deaths due to Heart Disease, Cancer, Stroke, Pneumonia and Influenza, Diabetes, Motor Vehicle Accidents, Kidney Disease, and Suicide, and hospitalizations related to Alcohol and Substance Abuse. Unless otherwise noted, all data used in this analysis were provided through Missouri Information for Community Assessment (MICA) for the years 1994 through 2003. To conduct the comparisons, the rates were divided into quintiles by ascending order, and rates in the first two quintiles were labeled as 'Lower than State Rate'; rates in the third quintile were labeled as 'Equal to State Rate'; and rates in the fourth and fifth quintile were labeled as 'Greater than State Rate'.

Of the forty-five counties with age-adjusted death rates for all causes higher than the state rate, forty-two (93%) are rural. The majority of those counties with higher death rates are in the southern areas of the state, including much of the counties within the Bootheel or Mississippi delta region of the state. Map 3.

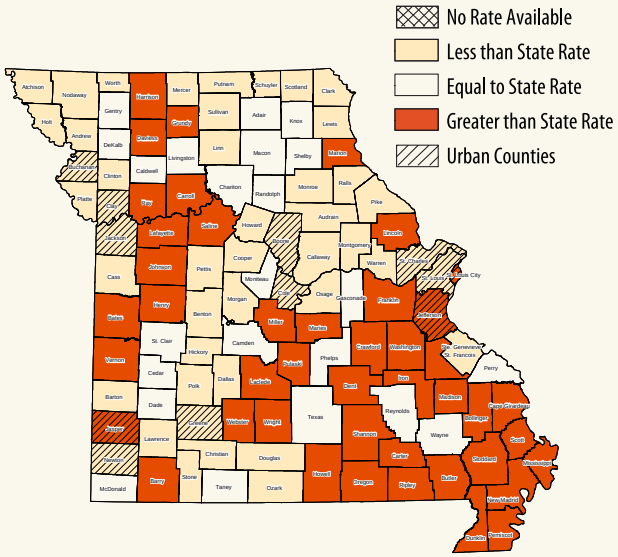
Heart Disease

Although the trend of the state rate shows a statistically significant decrease, heart disease continues to be the leading cause of death in Missouri. Forty-one of the counties with a rate higher than the state rate for this health indicator, forty-four in all, are rural. Of the rural counties only 37% have a rate lower than the state rate, compared to 75% of the urban counties. Map 4 shows the distribution of counties according to cause of death due to heart disease.

Map 3 *Deaths Due to All Causes 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 927.2



Map 4 *Deaths Due to Heart Disease 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 294.6



Cancer

The trend of the state's age-adjusted death rate from all cancers in Missouri shows a statistically significant decrease in the last decade. However, cancer continues to be the second leading cause of death in the state. The proportion of counties with rates lower than and greater than the state rate is similar to the percentage of counties that are rural. That is, about 89% of the counties in the state are rural, and about 89% of the counties in the lower and greater than state rate categories are rural. However, it is interesting to note that the majority of rural counties with rates higher than the state rate are located in the southern areas of the state. The distribution of counties by their respective death rate categories due to cancer is shown in Map 5.

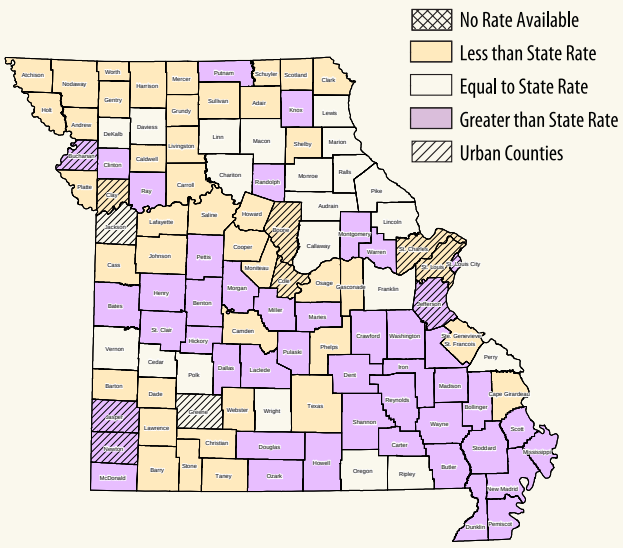
Stroke

Stroke is the third largest cause of death in Missouri and the nation. According to the American Heart Association, stroke is a leading cause of serious, long-term disability in the United States. In Missouri, there is a disproportionate percentage of rural counties among those counties with rates higher than the state rate. Over 93% of the counties with rates higher than the state rate are rural. Of note is the fact that, unlike previously mentioned causes of death, many counties in the northwest section of the state have a death rate due to stroke above the state average. The distribution of counties for deaths due to stroke by rates lower than, equal to, or greater than the state rate is shown in Map 6.

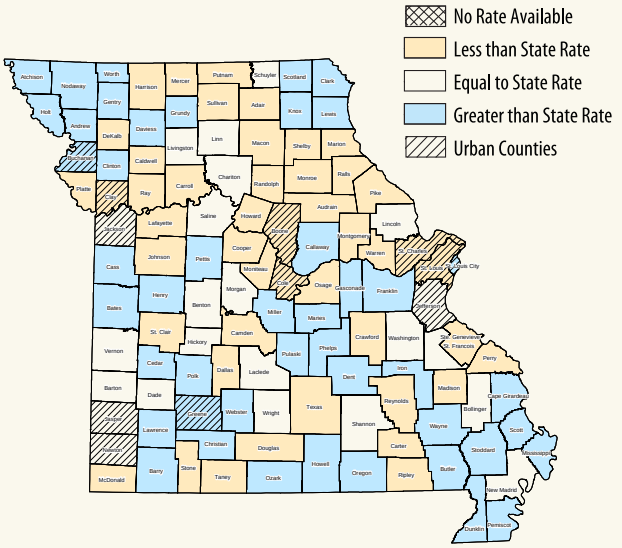
CANCER Stroke

Biennial Report 04-05

Map 5 *Deaths Due to Cancer 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 209.1



Map 6 *Deaths Due to Stroke 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 64.3



Pneumonia and Influenza

The fifth leading cause of death in Missouri is pneumonia and influenza. Rural counties make up a slightly higher percentage of counties with a rate higher than the state rate (90% as opposed to 89% counties being rural). However, when looking only at rural or urban counties, 40% of rural counties have a rate above that of the state, while for urban counties the rate is 33%. The Missouri rate trend for deaths due to pneumonia and influenza shows a statistically significant decrease; this may be due in part to the widespread use of vaccines for these diseases, which is one indicator of service quality being measured in rural hospitals. However, these diseases continue to have a substantial impact on Missourians. The distribution of counties by their respective rate categories for deaths due to pneumonia and influenza is shown in Map 7.

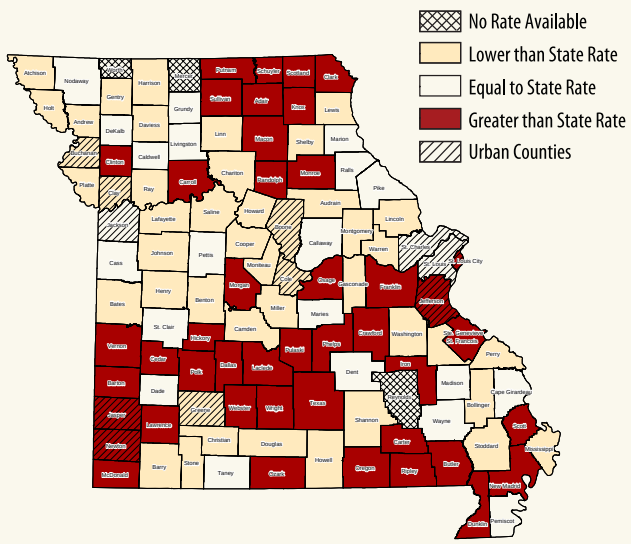
Diabetes

An alarming aspect to the health status indicator diabetes is that the rate trend for the state shows a statistically significant increase. Type 2 diabetes, formerly known as adult diabetes or non-insulin dependent diabetes, accounts for 90-95% of all persons diagnosed with diabetes. Risk factors for Type 2 diabetes include family history of diabetes, obesity, physical inactivity and older age. Increasing rates of obesity in the state (17.6 in 1994 to 23.6 in 2003 according to the Missouri Behavioral Risk Factor Surveillance System) and the increasing percentage of the population in the older age groups, especially in rural areas, are increasing the impact of this disease. Rural counties make up 88% of those counties with a rate higher than the state rate. Unfortunately, rates could not be calculated for over 11% of the rural counties. The distribution of counties by their respective rate categories for deaths due to diabetes is shown in Map 8.

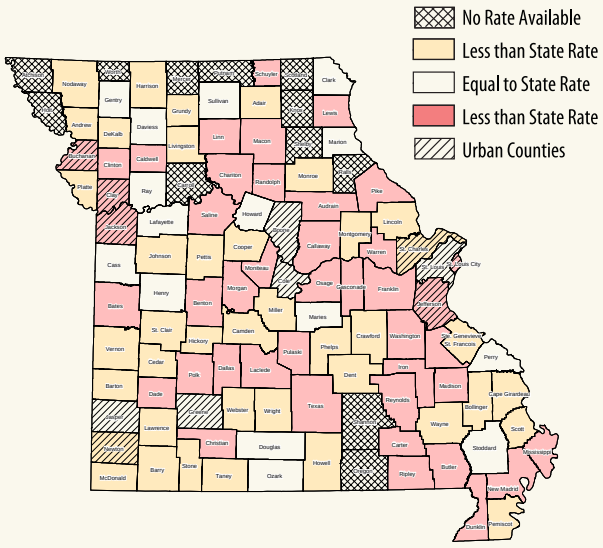
Pneumonia Influenza & Diabetes

Office of Primary Care and Rural Health

Map 7 *Deaths Due to Pnuemonia and Influenza 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 32.5



Map 8 *Deaths Due to Diabetes 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 24.3



Motor Vehicle Deaths

Deaths due to this cause are the most dramatic indicator of the disparity of health systems between rural and urban communities. Accidents along the rural roadways of Missouri resulted in more deaths due to geographic isolation, conditions of the highways, types of traffic and the lack of health system infrastructure to meet the need. All of the counties with motor vehicle accident death rates greater than the state rate were rural counties. Conversely, all of the urban counties had rates lower than the state rate for motor vehicle deaths. The distribution of counties by their respective rate categories is shown in Map 9.

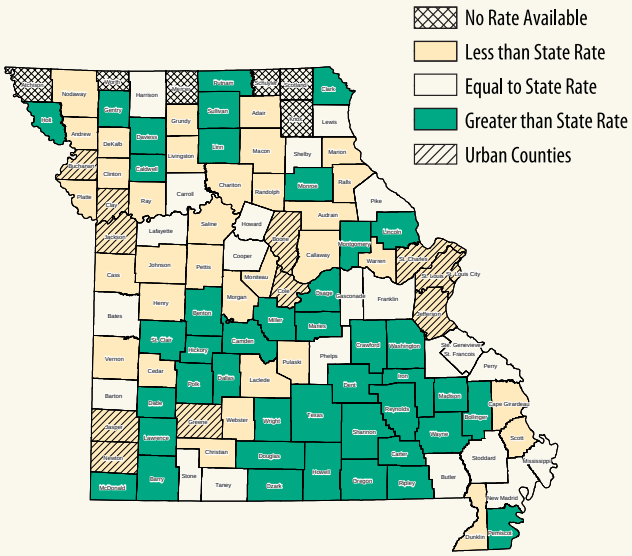
Kidney Disease

Deaths due to kidney disease are classified as those deaths resulting from nephritis, nephrosis, or nephrotic syndrome. Most of the deaths in this category are attributed to chronic renal failure, or to renal failure unspecified whether chronic or acute. Although rates for kidney disease deaths could not be calculated for over 24% of the rural counties, rural counties still constituted 90% of the counties with rates higher than the state rate. It is important to note that all the counties whose rates were in the highest quintile were rural counties. The distribution of counties by their respective rate categories is shown in Map 10.

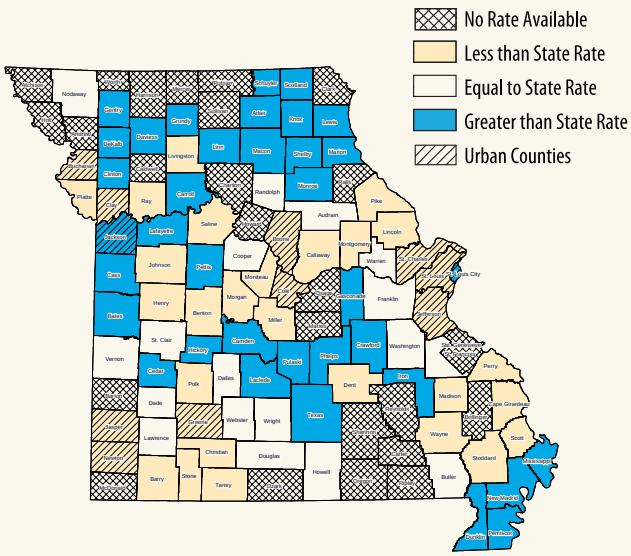
Motor Vehicle Deaths

Kidney Disease

Map 9 *Deaths Due to Motor Vehicle Accidents 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 20.4



Map 10 *Deaths Due to Kidney Disease*
Age-adjusted Death Rates Missouri Rate: 13.9



Suicide

Rural counties make up 100% of the counties whose rate for the cause of death by suicide exceeds the state rate. This is the case even though rates are not available for forty (38.8%) of the rural counties. Conversely, all of the urban counties in Missouri have rates that are equal to or less than the state rate. This health status indicator, in addition to the following indicator (Alcohol and Substance Abuse), is indicative of the mental health needs within rural communities. The distribution of counties by their respective rate categories for deaths due to Suicide is shown in Map 11.

Alcohol and Substance Abuse

The proportion of rural counties whose hospitalization rate for alcohol and substance abuse is greater than the state rate is less than that of the urban counties, 34% for rural and 92% for urban. There is still much concern regarding the growth of alcohol and substance abuse in rural areas. Map 12, which shows the distribution of counties by indicator rate for hospitalizations due to alcohol and substance abuse, shows an interesting pattern in the rural counties with the higher rates. Most of the rural counties with hospitalization rates higher than the state average (85%) are south of the Missouri River.

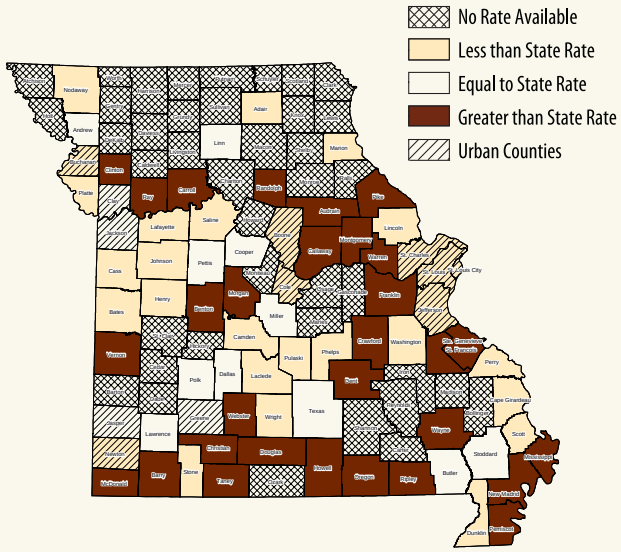
The health status indicators presented illustrate the state of health in the rural communities of Missouri. There are many disparities to address in rural areas; and the resources available are, relatively, limited. These indicators are greatly influenced by the social and economic characteristics of rural Missouri, as well as the lack of health care infrastructure within those communities.

Suicide

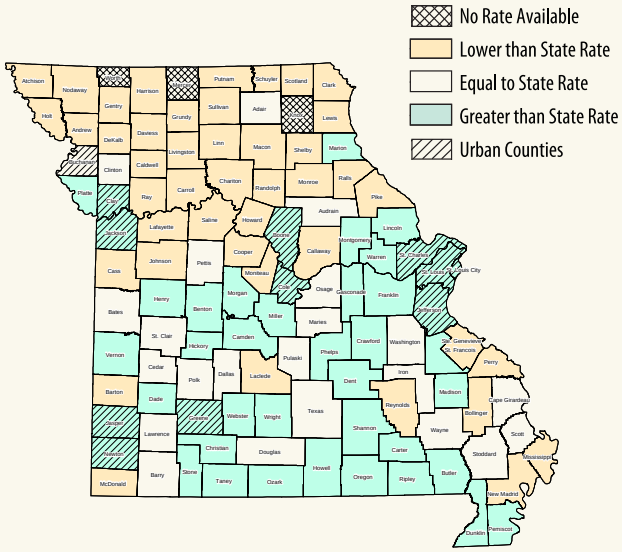
Alcohol and Substance Abuse

Office of Primary Care and Rural Health

Map 11 *Deaths Due to Suicide 1994 to 2003*
Age-adjusted Death Rates Missouri Rate: 12.9



Map 12 *Hospitalizations Due to Alcohol and Substance Abuse 1994 to 2003*
Rate per 10,000 Population Missouri Rate: 16.0



Socio-Economic Characteristics

There are several socio-economic characteristics that have a direct relationship to health in a community or region. The impact of poverty and education on health status are well documented. In the following sections several indicators are reviewed, and comparisons are made where appropriate between the rural and urban counties in the state.

Poverty

Of the 85 Missouri counties that have a percent below poverty rate greater than that of the state as a whole, 80 are rural counties (94%). As indicated in the map below, only one urban county (St. Louis City) is in the highest quintile, in terms of poverty. The average poverty rate for Missouri's rural counties was 14.7% below poverty, while in urban counties the average poverty rate was 10.7%. It is also of note that the rural counties with the lowest poverty rates were those directly adjacent to the urban areas. In terms of the poorest rural counties, the majority are in the southeast region of the state. Map 13 shows the distribution of poverty, by county, in Missouri.

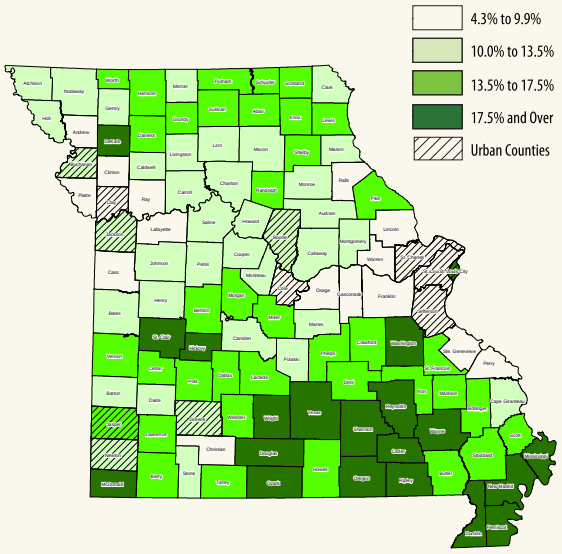
When only looking at the population under 18, the differences between urban and rural counties are even more pronounced. The percent of children living below poverty is greatest in 29 rural counties and the city of St. Louis. Twenty-one of those rural counties are located in the southeast region of the state. The distribution of counties according to children living below poverty is shown in Map 14.

Unemployment

A characteristic closely tied to poverty as an indicator of the financial health of a community is the unemployment rate. In 2004, fifty counties in Missouri had an annual average unemployment rate greater than the state as a whole. Of those counties, 47%, or 94% were rural counties. Although St. Louis City had the highest unemployment rate in the state (9.1), Pemiscot and Taney counties were second and third, with a rate of 9.0 for each. In total, there were 15 counties with unemployment rates over 7.0, 14 of which were rural counties. Map 15 depicts the 2004 annual unemployment rates by county.

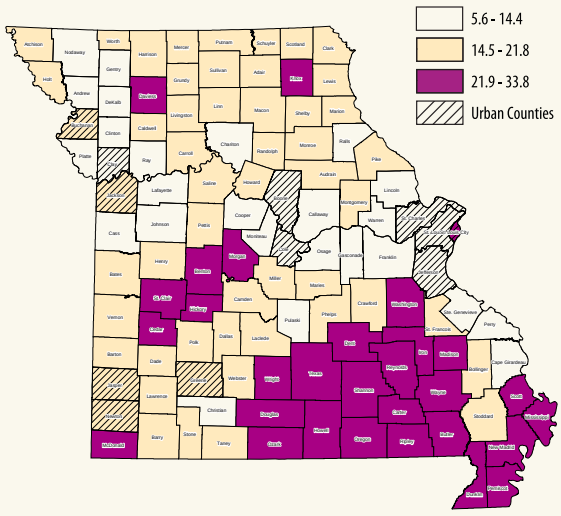
Map 13 *Percent of Population Below Poverty*
2002 Estimates Missouri Rate: 11.3

Source: Bureau of the Census, Small Area Income and Poverty Estimates, December 2004.



Map 14 *Percent of Children Below Poverty*
2002 Estimates Missouri Rate: 15.7

Source: Bureau of the Census, Small Area Income and Poverty Estimates, December 2004



Uninsured Populations

In 2004 the Missouri Department of Health and Senior Services conducted a study to determine the proportion of the state population without health insurance. The relationship between health insurance and health is a strong, direct relationship, as health insurance is highly correlated with income and health care access. In the recent study, the percent of the population without health insurance was estimated for each county in the state. As is indicated on the following map, rural areas have higher rates of individuals without insurance than do the urban counties. Of the 29 counties with more than 20% of their populations uninsured, all but one (97%) were rural counties. Only two urban counties (Jasper and Newton) were among the 65 counties with uninsured percentages over 15%. Lack of insurance, along with reduced access to health care delivery services, is a dangerous combination that exists disproportionately in rural Missouri. Map 16 shows the distribution of counties according to the estimated percentage of uninsured individuals.

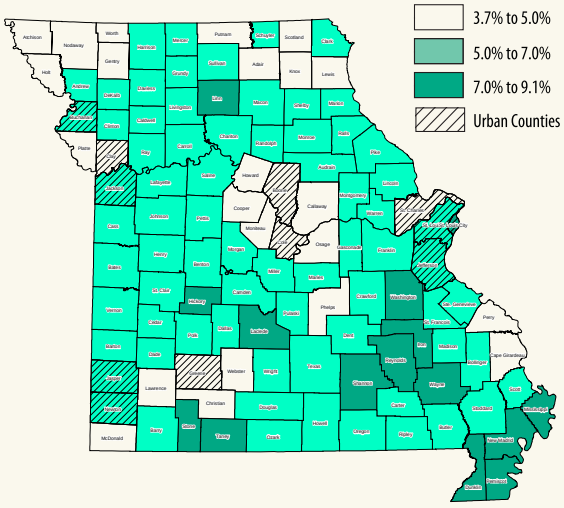
Education

Education and income are highly correlated with health status. The higher the education and income levels of a population, the better the health status is likely to be for that population. In rural Missouri, the lack of education, as measured by the percent of population without a high school education, is a very serious issue. Nineteen counties in the state have a percent of population over 18 without a high school education that ranges from 39% to over 61%. All of those counties are rural, and all but two were in the southeast region of the state. Of the 70 counties with more than 20.7% of adults without a high school education, only one (St. Louis City) was not rural. Of all rural counties, almost 85% have a percent of adults without a high school education greater than the state rate. This is a critical factor in developing intervention strategies to impact health in rural Missouri. Map 17 displays the percentage of adults without a high school education, by county, according to the 2000 national census.

Uninsured Populations Education

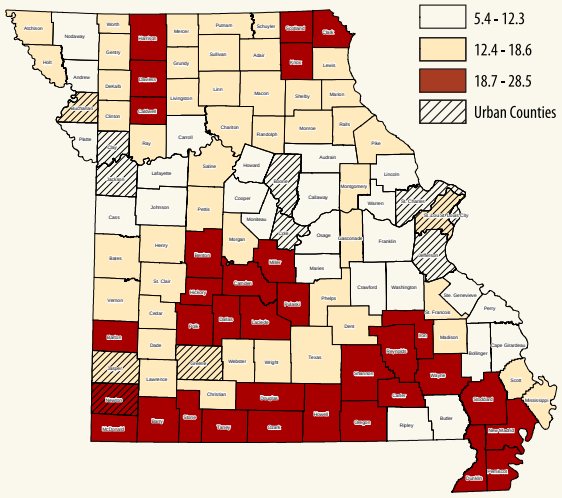
Map 15 *Unemployment Rates by County*
2004 Annual Average Missouri Rate: 5.7

Source: Missouri Department of Economic Development.



Map 16 *Uninsured Population Estimates 2004*
Missouri Rate: 12.3

Source: Missouri Department of Health and Senior Services, State Planning Grant, 2004.



Health Resources

Health resources, an essential element in the prevention and treatment of disease and health conditions, is sorely lacking in most rural communities. Small rural towns no longer have the critical mass of people or income to support full-time physicians or dentists, as well as many other health care professionals. It is in the area of health care resources that the stark contrast between rural and urban areas is most obvious. In this section the health resources reviewed include hospital services, primary care physicians and general practice dentists. Although there are many other essential health care practitioners that make up the health care delivery system, these resources are adequate to differentiate between the rural and urban conditions.

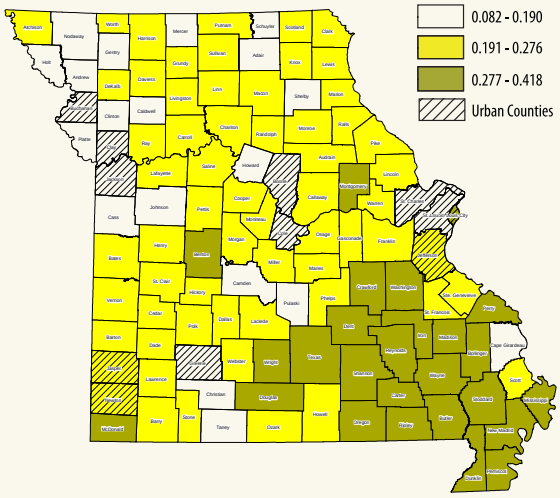
Hospital Services

Forty percent of rural counties in Missouri do not have a hospital. Of those rural communities that have a hospital, only 5% of rural hospitals have over 100 beds; and those facilities, in Butler, Cape Girardeau and St. Francois counties, serve large rural service areas. The lack of hospitals in rural Missouri is also indicative of the lack of certain hospital services, especially emergency room and specialty care. The need for these services is dramatically evident in the disparity of health status indicators identified earlier. However, most rural populations have to travel excessive distances to obtain many types of specialty care, e.g., cardiology, rheumatology, endocrinology, etc. Given the large proportion of rural populations that are elderly or in poverty, the lack of these services locally can mean no access for those in need. Map 18 shows the distribution of staffed hospital beds in the state.

Hospital Services

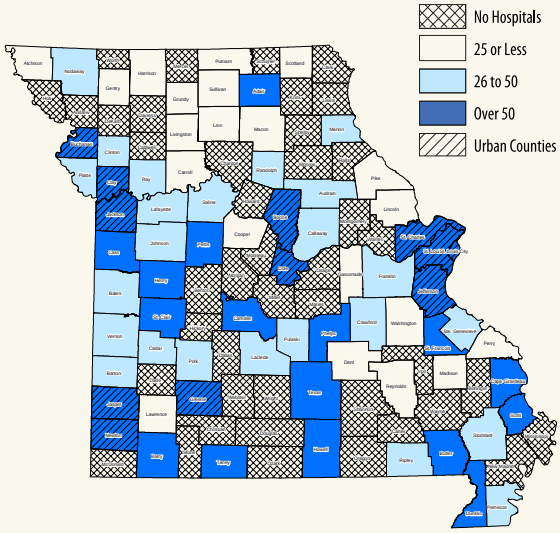
Biennial Report 04-05

Map 17 *Percent of Population Over 18 Without a High School Education 2000 Census of the Population Missouri Rate 18.7*



Map 18 *Staffed Hospital Beds by County*

Source: Missouri Department of Health and Senior Services.



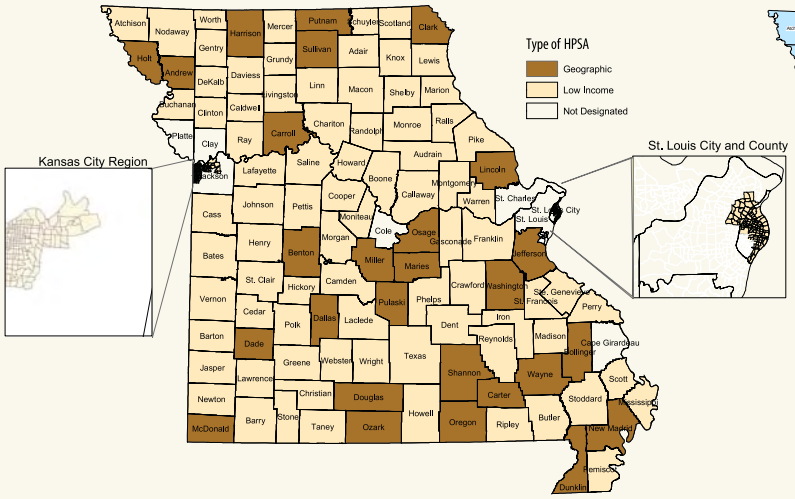
Primary Medical Care

The Office estimates 31% of Missourians currently lack adequate access to health care. Of this 31%, 12.8% are uninsured[1] and 18.2% are on Medicaid[2]. It is very likely this estimate is low, as many Missouri employers either do not provide insurance or offer a higher wage for employees who forgo insurance. The increasing cost of health care coverage continues to discourage most small employers from providing health care insurance to their employees. In times of nationwide low unemployment, health insurance and Medicaid programs often overlook this rapidly growing "special" population of adult working poor. Working without insurance places medical, dental and mental health care services beyond financial reach for most. Also the homeless and illegal aliens are two groups that are probably not well represented in this percentage.

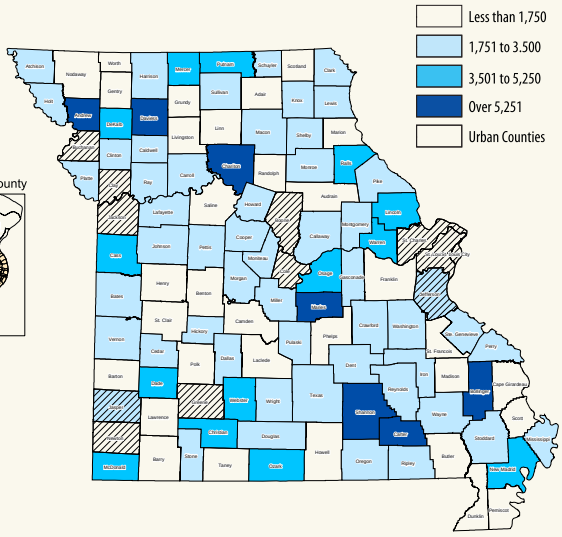
Additionally, the number of federally designated Health Professional Shortage Areas (HPSA) has decreased and the types of HPSA designations are changing. For instance, Geographic HPSAs are based on the ratio of primary care physicians to the general population, while Low-Income HPSAs are based on the amount of care provided to those at or below 200% of the Federal Poverty Level (for Missouri this is mainly the Medicaid and uninsured patients). Much of this radical change is prompted by the concentration of primary care providers in regional medical centers. Therefore, areas that previously qualified as Geographic HPSAs are being designated as Low-Income HPSAs. Map 19 illustrates the current Primary Care HPSA distribution for the two types of HPSA designations in Missouri.

Twenty-one counties in Missouri, all rural, have a population to primary care physician ratio that exceeds 3,500 to 1, the federal standard for health professional shortage areas. Only one urban county (Jefferson) has a ratio of greater than 3,000 to one, while one-third of rural counties exceed this ratio. Most urban counties (75%) have ratios of less than 1,400 to one. Although 40% of Missouri's population lives in rural areas of the state, only 25% of the primary care physicians are located in rural areas. This disparity in primary medical practitioners is a critical factor in assuring access to preventive and maintenance health services in rural Missouri. The distribution of primary care physicians in Missouri is shown on Map 20.

Map 19 *Primary Care Health Professional Shortage Areas (HPSA) January 2005*



Map 20 *Ratio of Population to Primary Care Physicians, 2004*



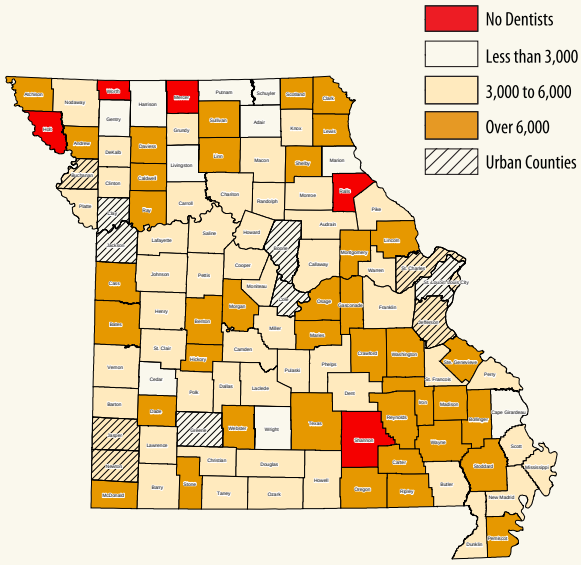
Primary Care Dentists

Other key health care practitioners are primary care dentists. Recent research has identified the impact of oral disease on heart disease and diabetes, and found strong correlations with birth outcomes as well. The need for dentists is not exclusively a rural problem, although access to dental services is a much greater issue in rural communities. The average number of patient visits a dentist sees each year is less than 3,000. In Missouri, the number of counties with a population to dentist ratio that exceeds 3,000 to 1 is 100 or 87%. Of those that exceed this standard, 93 are rural. Additionally, there are five rural counties that don't have a dentist in the county. Although there are ten rural counties with ratios of less than 3,000 to 1, these counties tend to be either regional medical centers or have very low populations. The dentists in rural Missouri represent only 28% of licensed dentists, while the population in those counties constitutes 40% of the total population. The distribution of dentists in Missouri counties is represented on Map 21.

In summary, whether looking at indicators of health status, economics or health infrastructure, the rural areas of Missouri are at a disadvantage, when compared with the state as a whole or with urban counties. These indicators are closely related, as the socio-economic status and health infrastructure of a community determine in large part the health status of that community. In order to address the health outcomes in rural communities, the Office of Rural Health has developed and implemented, with national, state and local partners, a series of interventions and programs designed to address the socio-economic and health infrastructure issues in rural areas. Those efforts are detailed in the following section.

Primary Care Dentists

Map 21 *Ratio of Population to General Dentists, 2004*



Activities and Programs

The program and activity areas of the Office are designed to address the health infrastructure of rural communities to impact both the health outcomes and economy of those communities. The programs listed are efforts to improve outcomes within the emergency medical, hospital and primary care services in rural communities. Although these entities are often the direct recipients of the technical assistance or services provided by the Office, all other aspects of the rural community, including local public health, education, local government, businesses and social service agencies are encouraged or required to be partners and participants in the overall efforts. The specific programs and functions are described in detail below.

Missouri Comprehensive Advanced Life Support Program

Rural facilities often lack trauma or general surgeons, specialists, and diagnostic tools, unlike the emergency departments of urban hospitals. Transport of seriously ill patients to tertiary centers might take hours. The patient's life depends on the skill and knowledge of a health care team that may consist of only a family physician and several general care nurses.

This common rural scenario led to the formation of the Comprehensive Advanced Life Support (CALS) program, an educational program developed by a multidisciplinary working group supported by the Minnesota Academy of Family Physicians. The primary focus is to train medical personnel in a team approach to anticipate, recognize, and treat life-threatening emergencies. There are three components to the CALS program: 1) home study, 2) provider course and 3) Benchmark Lab.

The Missouri Office of Rural Health determined there was significant value for the CALS program in Missouri. The Office has contracted with A. T. Still University of Health Sciences, Missouri Area Health Education Center (AHEC) to assist with the formation of a Missouri Chapter of CALS (MoCALS). Funding for this program was provided through the Medicare Rural Hospital Flexibility (FLEX) grant. Activities focused on implementation of MoCALS began September 1, 2004, and are continuing. The Minnesota CALS program recommended certain professional and provider groups that were critical to the success of the program. The groups recommended to be approached for support of the MoCALS program include: American College of Emergency Physicians – Missouri Chapter, Missouri Academy of Family Physicians, American College of Surgeons/Trauma Surgeons, Missouri Nurses Association, and American Heart Association – Missouri Affiliate.

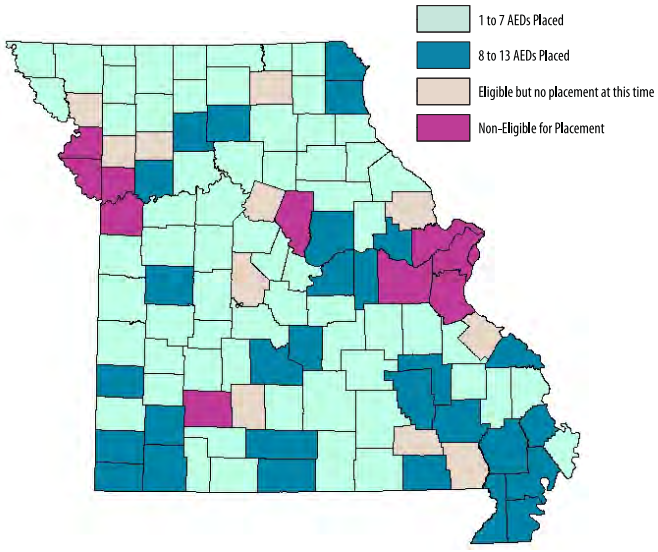
The MoCALS Planning Committee provides guidance and stakeholder input on the operations of the program. The Planning Committee has been expanded and continues to work to not only develop the MoCALS program, but to assure that the program is supported by critical groups throughout the state. Twelve individuals participated in MoCALS training during the budget period, representing hospitals and clinics in six communities in Missouri. These individuals will complete Phase II of the instructor training and participate as instructors in offering the first MoCALS provider courses in early 2006.

Rural Access to Emergency Devices Program

This program provides Automated External Defibrillators (AED) and training in Cardiopulmonary Resuscitation (CPR) and AED operations in federally designated areas of rural Missouri through grant funds provided by Health Resources and Services Administration (HRSA). The Office has partnered with the Unit of Emergency Medical Services (EMS) in the development of the approved distribution plan and for coordination of training of healthcare professionals and non-healthcare personnel from each recipient site. Training includes certifications in CPR and AED through American Red Cross or American Heart Association instructors and basic stroke information.

During state fiscal years 2004 and 2005, over 480 AEDs were distributed in rural Missouri and over 3,400 rural first responders received CPR, AED and stroke training. Map 22 shows the distribution of AEDs in Missouri.

Map 22 *Rural Access to Emergency Devices Automatic External Defibrillator Placement by County*



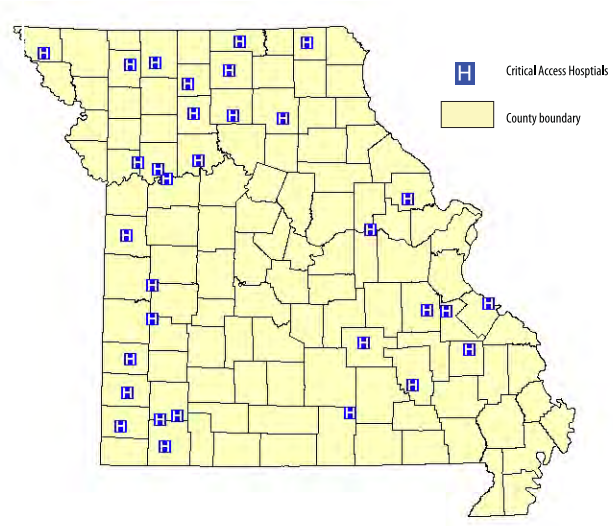
Critical Access Hospital (CAH) Conversion Program

Through the Medicare Rural Hospital Flexibility Program, the Office has the opportunity to certify rural hospitals as Necessary Providers, making them eligible for CAH status. As a CAH, rural hospitals are limited to 25 licensed beds and must have certain services, such as an emergency room. The benefit to the hospital and community of CAH status is an enhanced reimbursement from Medicare for inpatient, outpatient and emergency room services. This is extremely important as rural communities tend to have higher concentrations of Medicare-dependent, elderly populations. Currently there are 32 facilities that have converted to CAH status. The location of those facilities is shown on Map 23.

Footnotes: [1] Uninsured data obtained from Behavioral Risk Factor Surveillance System (BRFSS).

[2] Medicaid population data collected from Department of Social Services, Division of Medical Services.

Map 23 *Critical Access Hospitals November 2005*



Small Rural Hospital Improvement Program

The Small Rural Hospital Improvement Program (SHIP) is a federally funded program that provides funding to small rural hospitals to pay for costs related to compliance with provisions of Health Insurance Portability and Accountability Act (HIPAA) implementation of the Medicare Prospective Payment System (PPS), and the expansion of Quality Improvement Programs. To be eligible for these grants, a hospital must have fewer than 50 available beds, as reported on the hospital's most recently filed Medicare Cost Report, and be located outside a Metropolitan Statistical Area (MSA).

During the reporting period, $544,393 was distributed among 30 participating hospitals. The funds were used in quality improvement programming (52%), HIPAA compliance (31%) and PPS implementation (17%). The majority of these funds are used to purchase technical assistance, services, training and information technology. To help maximize purchasing power through economies of scale, the Office encouraged and assisted eligible hospitals to form consortiums and pool their grant funds for the purchase of needed services.

Critical Access Hospital Network (CAHNet)

In January 2005 the Office, Missouri Hospital Association, Missouri Rural Health Association and Primaris (Missouri's health care facility quality improvement organization as designated by the Center for Medicaid Services) formed a statewide technical support and communications network for Missouri Critical Access Hospitals. The network, referred to as the "CAHNet", was created to identify and deliver essential technical assistance and services for CAHs. CAHNet activities are to strengthen and sustain quality and safety by:

- Enhancing and sustaining operational efficiencies and continuity.
- Developing and implementing strategies that lead to increased organizational effectiveness.
- Engaging customers and community stakeholders in creating an effective and efficient system of care.
- Defining, building, and participating in local and regional partnerships.

To identify and target needed technical assistance, the Office and CAHNet partnership identified current CAH needs and capacity through online surveys and consultations with CAH administrators and key senior staff. Based on information obtained from the survey, resources will be allocated to implement the Balanced Scorecard Performance Improvement Program. The model has proven to be highly successful in the Mississippi Delta region and was dynamic enough for each hospital to define its unique objectives, initiatives, targets and measures for quality improvement. Ultimately, it is the goal of the Office to have not only CAHs but all rural hospitals implement quality improvement plans and measures that either increase, optimize or sustain rural health care services to their communities and customers.

Balanced Scorecard Performance Improvement Program

Based on information provided by Critical Access Hospitals (CAH) in Missouri, the Office allocated resources to implement a model for quality improvement called the Balanced Scorecard. The model proved to be highly successful in the Mississippi Delta region and was dynamic enough for each hospital to define their objectives, initiatives, targets and measures for quality improvement. Five Missouri rural hospitals are presently engaged in the Balanced Scorecard. Ultimately, it is the goal of the Office to have not only CAHs but all rural hospitals implement quality improvement plans and measures that either increase, optimize or sustain rural health care services to their customers and communities.

CareLearning

The Office, through a contract with the Missouri Hospital Association (MHA), provides internet-based health and safety training to staff of CAHs. This program, "careLearning", consist of the Health and Safety Compliance Training package, and includes courses in Abuse and Neglect, Age-Specific Care, Blood-Borne Pathogens, Disaster Preparation, Electrical Safety, Fire Safety (R.A.C.E.), Hazardous Communications Plan, Moving and Lifting (Back Injury Prevention), Patient Rights, Slips/Trips/Falls, Standard Precautions, Restraints and Seclusions, and Tuberculosis. This is the third year of participation in this program. Through the MHA contract, the Office covered the costs for all interested CAHs. Letters of understanding were signed to participate in Health and Safety education modules, which were completed "in-house". Employees were given one year from the hospital start date to complete this training.

Primary Care Delivery System Development

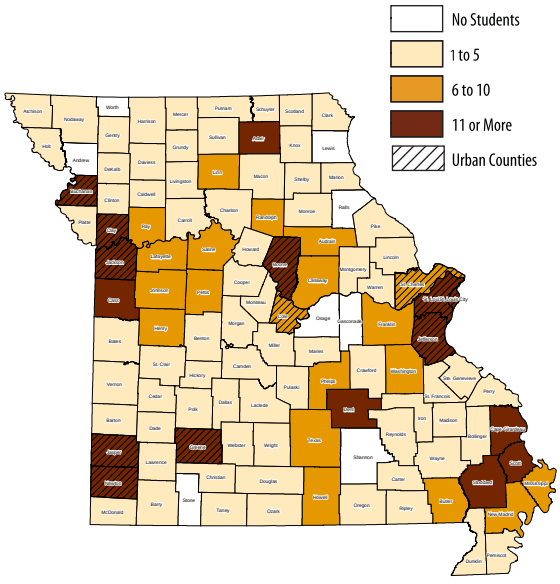
Assurance of economically sustainable health care delivery systems that provide high quality, accessible, primary medical, dental and mental health services are essential to the survival of rural communities. The services include an array of health services and care settings within a community that strives to prevent, treat and manage disease, injury and disability to benefit both the individual and the community. To assist communities in reaching this goal, the Office has worked with the Health Care Delivery System Development component of the Primary Care Office and the Primary Care Resource Initiative for Missouri (PRIMO) program.

In state fiscal years 2004 and 2005, PRIMO/Office of Rural Health invested $1,697,400 in rural communities. Services provided were primary medical, dental, and mental health care services in nine rural communities. The investments included adding sufficient capacity to provide services to more than 60,000 rural individuals with little or no access to those services previously.

Rural counties with communities receiving PRIMO investments included Chariton, Howell, Iron, Lafayette, Linn, Ozark, Pettis, Taney and Washington counties. More than $3 million in ongoing annual federal grants to the community health centers in Chariton, Howell, Iron, Linn, Ozark, Pettis, Taney and Washington counties are attributed to the PRIMO investment and support provided.

In addition to the specific community investments, PRIMO made investments in statewide organizations and institutions to facilitate early recruitment of students pursuing primary health care careers through the PRIMO "pipeline." The investment outcomes were focused around establishing clinical training opportunities in rural and underserved areas, in order to develop pre-admissions programs and to provide communication systems for medical students and resident physicians. A total funding of $1,400,000 went directly to the organizations/institutions. An additional $2,678,000 was distributed to students in the form of student loans. This benefited the communities by reducing the funds that *leave* to pay for education in another community (typically urban). This also provided funds to training institutions, which positively impacts the economics of the educational institutions' communities.

Map 24 ***Number of PRIMO and Nurse Loan Participants by County, as of 2005***



Health Professional Recruitment and Retention

A Special Theme Research Report from Academic Medicine on recruitment and retention of primary care physicians indicates, "Scientific studies available to health educators and policymakers show there are predictable factors that influence recruitment and retention in rural areas. Policies for staffing rural areas with primary care physicians should be aimed at both selecting the right students, and giving them during their formal training the curriculum and the experiences that are needed to succeed in primary care in rural settings."[1]

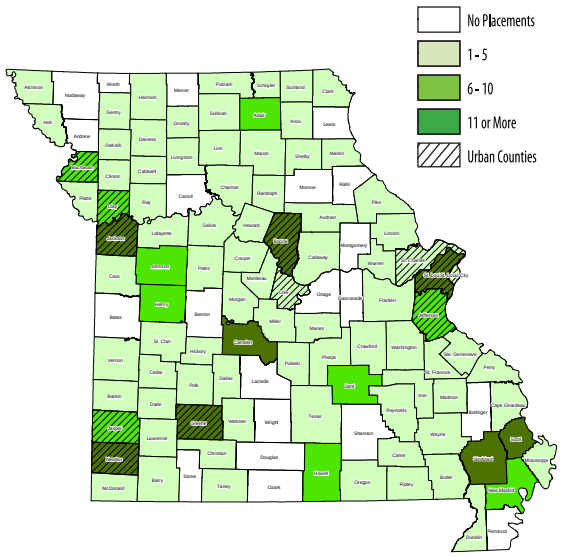
For Missouri's rural communities, this means the best chance for finding and keeping rural health care practitioners, whether physicians, nurses, dentists or mental health care practitioners, is by "growing our own." It has been the policy of the Office of Primary Care and Rural Health to build capacity in communities across the state by identifying, encouraging and providing financial support to individuals from rural and underserved communities to pursue health care careers. The result is providing a place for the professionals to practice upon completion of their education. Map 24 shows the home counties of students participating in health professional loan programs.

During 2004 and 2005, the health professional incentive programs within the Office placed 52 physicians, dentists and nurse practitioners in underserved communities in Missouri. Of those placed, 50% were in rural counties. Additionally there are more than 70 nurses (Associate and Bachelors Degree as well as Licensed Professional Nurses) earning forgiveness for student loans provided through the Office. Of those nurses 31, or 42.6%, were placed in rural counties. Map 25 shows the distribution of placements by the Office's student loan programs.

The Office has been involved in recruitment and placement of health professionals in underserved Missouri communities in a number of other ways. One of those has been through utilization of the Practice Sites recruitment software to implement Missouri Provider Recruitment Services. In collaboration with the Missouri Primary Care Association (MPCA), providers are recruited in the fields of medicine, dental health, and mental health for underserved areas of Missouri. This entails maintaining a database of providers interested in practicing in underserved areas of Missouri and also working with healthcare facilities and identifying job opportunities. There is no fee associated with recruitment assistance.

This Office also has a long history of working with the National Health Service Corp (NHSC) in recruiting health professionals into the state. Partnering with the NHSC allows for identification and recruitment of viable practice locations for NHSC placements. The Office is able to provide technical assistance and insight on practice locations by using statewide needs assessments, availability of practitioners, Community Health Center new starts and expansions, and community health care system development efforts.

Map 25 *Number of PRIMO and Nurse Loan Health Profressional Placements by County, as of 2005*



The partnership and collaboration between Missouri Provider Recruitment Services and NHSC have resulted in placing 256 health professionals throughout Missouri in state fiscal years 2004 and 2005. Of the 256 placements, 68% have been placed in rural underserved sites in Missouri, while 32% of placements were in urban areas in Missouri. The discipline of the placements are as follows: 146 or 57% were Primary Health Care Providers; 31 or 12% were Dental Health Care Providers; and 79 or 31% were Mental Health Care Providers.

Thirty additional physicians are placed each year through the state's J-1 Visa/State 30 Waiver program, which allows foreign medical graduates to practice in underserved areas of the state. In state fiscal years 2004 and 2005, 57% of the 60 J-1 Visa waivers were for physicians to practice in rural underserved counties in Missouri. Physicians placed in rural areas under this program are typically general practice physicians, pediatricians or psychiatrists. The Office assists in the selection of participants for this program to assure rural health care provider needs are met.

As previously indicated, the Office works in partnership with several external partners to increase the recruitment and retention of health professionals. These external partners include the Missouri Primary Care Association, the Missouri Hospital Association, and the Area Health Education Centers. Working with these partners and the federal and state resources, the Office of Primary Care and Rural Health has built programs with successes that can be measured in terms of compliance rates among participants and by the economic impact in both the home communities and in the educational institutions.

Oral Health

During this time period the Oral Health Program was added to the responsibilities of the Office. The Oral Health Program provides a broad range of core public health activities for oral health. Dental caries is one of the most common diseases in our children population with lack of access to oral health care being a contributing factor. The Office is implementing various initiatives to combat this chronic disease through development of a comprehensive oral health prevention and education system and for developing a safety net infrastructure to ensure an adequate, effective workforce for dental care, including dentists, dental hygienists, and dental assistants. Oral health educational resources/materials, portable dental equipment, fluoride mouthrinse and toothbrushes are provided to schools and communities conducting dental screenings and oral health promotion programs. A statewide oral health surveillance project involving dentists and dental hygienists has just been completed, and results are being finalized. Additional oral health efforts include:

- The Elks Mobile Dental Program that provides dental services to Special Health Care Needs Children and other special needs populations.
- The Missouri Donated Dental Services Program allows volunteer dentists to provide services at their own dental sites without charge to the patient. Additionally, participating laboratories will provide dental fabrication for a negotiated fee or at no cost.
- Community water fluoridation programs continue to be encouraged with information provided to assist communities.
- Recruitment of dentists and dental hygienists to locate in lack of access areas is accomplished through student loan repayment programs.
- Participation in state and local oral health coalitions helps to facilitate a comprehensive, statewide oral health prevention and education system and to ensure access to dental care.

Future Action and Next Steps

The Office of Primary Care and Rural Health has identified additional areas of concentration for the immediate future. Much of the programming that has occurred in the past will continue, with increased focus on measurable health outcomes. The identified areas of concentration include the following: Statewide Planning and Evaluation, Quality Improvement Activities, Network Development, Emergency Medical Services Enhancement and Systems of Care Modeling.

Planning and Evaluation

The Office has identified as a goal the development of an operational rural health plan for the state of Missouri. Although a state plan was developed to allow Missouri to participate in the Medicare Rural Hospital Flexibility Program, no operational plan has been developed. The Office, in collaboration with statewide partners, including the Missouri Rural Health Association, the Missouri Hospital Association, the Missouri Primary Care Association, and University Extension, has initiated a process to develop this plan. This report will form a portion of the needs assessment and asset mapping necessary to develop the plan. Also, additional statewide and community partners will be recruited to aid in the process. This process will be implemented in state fiscal year 2006.

Quality Improvement

Quality and performance improvement programming will continue to be an emphasis for all Office activities. It is the intent to expand tools such as the Balanced Scorecard from hospitals into other local and state organizations. The Office will implement a Balanced Scorecard for the statutory and grant required activities, as well as the other program areas within the organization. Other statewide and community partners will be encouraged, and technical assistance will be offered by the Office and other statewide partners, to implement this performance improvement approach that emphasizes strategic planning and public reporting.

Network Development

The expansion of CAHNet activities and participants is a key element of Office future operations. As the number of communities partnering with the Office increases, so do the opportunities to expand networks to provide input to the Office on program operations and environmental assessments, as well as sharing technical and financial resources among network participants. As the need increases in rural Missouri, and

the total amount of resources available holds constant, increased communication and coordination within and among rural communities holds the key to improving and sustaining health care outcomes.

EMS Enhancement

Emergency medical services will continue to be a priority area for Office programming in the future. New partners from Trauma Centers, emergency physician organizations and first responder agencies are being sought, with expanded education opportunities across the EMS delivery system. In addition, a Balanced Scorecard for EMS is being developed to encourage performance improvement activities in this aspect of the health care delivery system.

Systems of Care Modeling

The Office has used a model of community organization and planning referred to as the Systems of Care Model. In this approach, community coalitions representing all aspects of the community are the focal point for assessment, planning and resource allocation. The ability of a community to understand and effectively communicate the economic, social and health benefits of an effective and efficient health care delivery system (including preventive as well as restorative/acute care) is the central component of this approach. The coalitions are to provide the point of contact for the community.

Conclusion

The Department of Health and Senior Services' Office of Primary Care and Rural Health will continue to provide resources to community organizations, facilities and individuals in order to improve operational efficiencies, program effectiveness and health outcomes in rural Missouri. The Office will continue the focus on community organization and oversight of local systems of care, to enable and empower those communities to address their citizens' health care needs and to increase involvement and investment in health from all aspects of the community. The Office also welcomes the opportunities to work with federal, state and local partners to expand and improve Office operations, in order to assure optimal impact on the populations we serve.

Footnotes: [1] The Roles of Nature and Nurture in the Recruitment and Retention of Primary Care Physicians in Rural Areas: A Review of the Literature. Robert G. Brooks, MD; Michael Walsh; Russell E. Mardon, PhD; Marie Lewis, MPH; Art Clawson, MS. Academic Medicine, Vol. 77, No. 8, August 2002, 790-798.

Office of Primary Care and Rural Health

Missouri Department of Health and Senior Services

P.O. Box 570

Jefferson City, MO 65102-0570

1-800-891-7415

www.dhss.mo.gov/PrimaryCareRuralHealth